MATERIAL SAFETY DATA SHEET

1. SUBSTANCE AND SOURCE IDENTIFICATION

National Institute of Standards and Technology
Standard Reference Materials Program
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Gaithersburg, Maryland 20899-2320

SRM Number: 2693
MSDS Number: 2693
SRM Name: Sulfur and Mercury in Coal

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Description: This Standard Reference Material (SRM) is intended primarily for use in the evaluation of techniques employed in the determination of sulfur, mercury, ash content, and calorific value ($MJ \cdot kg^{-1}$) in coal and materials of a similar matrix. SRM 2693 consists of a 50 g bottle of bituminous coal with a nominal sulfur value of 0.5 %. It was ground to pass a 250 μm (60 mesh) sieve and homogenized.

Substance: Coal Dust.

Other Designations: Coal dust (bituminous coal; ground bituminous coal)

2. COMPOSITION AND INFORMATION ON HAZARDOUS INGREDIENTS

Component	CAS Number	EINECS	Concentration (%)
Coal Dust	not applicable	not applicable	100

Index, R/S Phrases (EC): Not classified.

3. HAZARD IDENTIFICATION

Major Health Hazards: Cancer (in humans).
Physical Hazards: Dust/air mixtures may ignite or explode.
Potential Health Effects:
Inhalation: Irritation, weight loss, chest pain, difficulty breathing, bluish skin color, lung damage, cancer.
Skin absorption: Irritation.
Eye contact: Irritation, eye damage.
Ingestion: Irritation.

Carcinogen Status:	Yes	No
National Toxicology Program (NTP) Report on Carcinogens	X	
International Agency for Research on Cancer (IARC) Monographs	X	
Occupational Safety and Health Administration (OSHA)		X

4. FIRST AID MEASURES

Skin Contact: Rinse affected area with soap and water for at least 15 minutes. Obtain medical assistance if necessary.
Eye Contact: Immediately flush eyes, including under the eyelids, with copious amounts of water for at least 15 minutes. Get immediate medical attention.
Inhalation: If adverse effects occur, remove to uncontaminated area. If not breathing, give artificial respiration by qualified personnel. Get immediate medical attention.
Ingestion: If a large amount is swallowed, get medical attention.

5. FIRE FIGHTING MEASURES

Fire and Explosion Hazards: Slight fire hazard. Dust/air mixtures may ignite or explode.
Extinguishing Media: Regular dry chemical, carbon dioxide, water, regular foam.
Fire Procedures: Avoid inhalation of combustion by-products.

Flash Point (°C): Not applicable. **Autoignition (°C):** Not applicable.

Flammability Limits in Air (Volume %): **UPPER:** Not applicable.
LOWER: Not applicable.

Flammability Class (OSHA): Not applicable.

6. ACCIDENTAL RELEASE MEASURES

Occupational Release: Collect spilled material in appropriate container for proper disposal.
Environmental Precautions: See "Section 13".

7. HANDLING AND STORAGE

Storage: Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances. Use methods to minimize dust.

8. EXPOSURE CONTROLS AND PERSONAL PROTECTION

Hazardous Component	Concentration (mass %)	Exposure Limits and Toxicity Data
Coal Dust	100	OSHA TWA: 0.3 mg/m^3 (quartz, total dust)
		OSHA TWA: 0.1 mg/m^3 (quartz, respirable dust)
		ACGIH TWA: 0.05 mg/m^3 (quartz, respirable dust)

Engineering: An eye wash station and drench shower should be readily available near the handling and use areas.
Ventilation: Local exhaust ventilation system.
Respirator: Appropriate respirator protection required for dusts, see 42CFR84 for selection and use.
Eye Protection: Wear safety goggles. **DO NOT** wear contact lenses in the laboratory.
Personal Protection: Chemically resistant gloves and clothing are recommended.

9. PHYSICAL AND CHEMICAL PROPERTIES

Coal Dust	
Appearance and Odor: black powder with little odor	**Specific Gravity (water = 1):** > 1
Molecular Mass: not applicable (complex mixture)	**Water Solubility:** negligible

10. STABILITY AND REACTIVITY

Stability: **X** **Stable** ____ **Unstable**

Stable at normal temperature and pressure.

Conditions to Avoid: Avoid generating dust.
Incompatibility (Materials to Avoid): Oxidizing materials, metals, metal salts, halogens, combustible materials,

reducing agents, bases, acids.

Hazardous Decomposition or Byproducts: Oxides of carbon.

Hazardous Polymerization: ____ **Will Occur** __X__ **Will Not Occur**

11. TOXICOLOGICAL INFORMATION

Route of Entry: X **Inhalation:** ____ **Skin** ____ **Ingestion**

Health Hazards (Acute and Chronic): Exposure to coal dust can occur through inhalation, ingestion, and eye contact. Coal dust may cause minimal irritation to the eyes and respiratory tract. Prolonged and repeated contact to dust may cause skin irritation. The respirable quartz component in coal dust is a known human carcinogen. See "Section 8" for exposure limits.

Medical Conditions Generally Aggravated by Exposure: Any individual with a chronic pulmonary disorder should protect against exposure to coal dust.

12. ECOLOGICAL INFORMATION

Adverse Effects: Not applicable.

13. DISPOSAL CONSIDERATIONS

Waste Disposal: Dispose in accordance with federal, state and local regulations.

14. TRANSPORTATION INFORMATION

DOT Registry: Not classified.

15. REGULATORY INFORMATION

U.S. REGULATIONS

SARA TITLE III SARA SECTIONS 311/312 HAZARDOUS CATEGORIES (40 CFR 370.21):

ACUTE: No
CHRONIC: Yes
FIRE: No
REACTIVE: No
SUDDEN RELEASE: No

CALIFORNIA PROPOSITION 65: Known as cancer causing for silica crystalline particles of respirable size.

EC RISK AND SAFETY CLASSIFICATION: Not classified.

16. OTHER INFORMATION

Sources: MDL Information Systems, Inc., MSDS *AnthraciteCoal ,* 18 March 2004.

Disclaimer: Physical and chemical data contained in this MSDS are provided only for use as a guide in assessing the hazardous nature of the material. The MSDS was prepared carefully, using current references; however, NIST does not certify the data in the MSDS. The certified values for this material are given in the NIST Certificate of Analysis.